

WHAT IS CLAIMED IS:

1. An electronic commerce distributed network,
comprising:

a plurality of interconnected processing nodes;

5 each processing node comprising a first sub-node and
a second sub-node, where the first and second sub-nodes
of each processing node are connected to communicate
information and are in geographically remote locations;

10 the first sub-node of each processing node
having:

an active state in which the first sub-
node communicates with other processing nodes and
processes electronic commerce messages communicated with
originator/recipient organizations; and

15 the second sub-node of each processing node
having:

a mirror state in which the second sub-
node mirrors the first sub-node; and

20 an active state in which the second sub-
node communicates with other processing nodes and
processes electronic commerce messages communicated with
originator/recipient organizations;

25 the first sub-node of each processing node
initially in the active state and the second sub-node
initially in the mirror state, and the second sub-node
operable to switch to the active state if the first sub-
node fails;

such that each processing node in the electronic commerce distributed network can maintain operation in the event the first sub-node experiences failure.

5 2. The network of Claim 1, wherein the processing of electronic commerce messages by each first sub-node and second sub-node when in the active state comprises:

 receiving electronic commerce messages from originator organizations;

10 processing the electronic commerce messages to build outgoing electronic commerce messages; and

 communicating the outgoing electronic commerce messages to recipient organizations.

15 3. The network of Claim 1, wherein the first sub-node of each processing node further has a mirror state in which the first sub-node mirrors the second sub-node;

 the first sub-node in the mirror state when the second sub-node is in the active state, and the first
20 sub-node operable to switch to the active state if the second sub-node fails;

 such that each processing node in the electronic commerce distributed network can maintain operation in the event either the first sub-node or the second sub-
25 node experiences failure.

 4. The network of Claim 3, wherein the first and second sub-nodes of each processing node each comprise:

 a processing engine;

a regional server; and
a regional mirror server;

wherein the processing engine and the regional
mirror server are operated when in the active state and
5 the regional mirror server is operated when in the mirror
state.

5. The network of Claim 1, wherein each processing
node provides processing of electronic commerce messages
10 for participating organizations within a regional area of
the processing node.

6. The network of Claim 1, wherein the first sub-
node and the second sub-node of at least one of the
15 processing nodes are in geographically locations
comprising different cities.

7. A processing node for an electronic commerce distributed network, comprising:

a first sub-node; and

a second sub-node, the first and second sub-nodes
5 connected to communicate information and in
geographically remote locations;

the first sub-node having:

an active state in which the first sub-node
communicates with other processing nodes and processes
10 electronic commerce messages communicated with
originator/recipient organizations; and

the second sub-node having:

a mirror state in which the second sub-node
mirrors the first sub-node; and

15 an active state in which the second sub-node
communicates with other processing nodes and processes
electronic commerce messages communicated with
originator/recipient organizations;

20 the first sub-node initially in the active state and
the second sub-node initially in the mirror state, and
the second sub-node operable to switch to the active
state if the first sub-node fails;

such that the processing node can maintain operation
in the event the first sub-node experiences failure

25 8. The processing node of Claim 7, wherein the
processing of electronic commerce messages by the first
sub-node and the second sub-node when in the active state
comprises:

receiving electronic commerce messages from
originator organizations;

processing the electronic commerce messages to build
outgoing electronic commerce messages; and

5 communicating the outgoing electronic commerce
messages to recipient organizations.

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9. A processing engine for a processing node of an electronic commerce distributed network, the processing engine comprising:

5 a plurality of communication units operable to communicate with participating organizations in a plurality of communication protocols, the plurality of communication units further operable to receive electronic commerce messages from originator organizations and communicate electronic commerce
10 messages to recipient organizations;

an engine operable to process an electronic commerce message received from an originator organization and to build an outgoing electronic commerce message for transmission to a recipient organization, wherein the
15 engine accomplishes processing and building by:

accessing profiles that defines characteristics for the originator organization and the recipient organization; and

20 invoking selected functions from a matrix of functions where the selected functions are chosen based upon the profiles for the originator organization and the recipient organization; and

an interface unit coupled to and communicating with the plurality of communication units and the engine, the
25 interface unit allowing incoming and outgoing electronic commerce messages to be communicated between the plurality of communication units and the engine;

the processing engine providing electronic commerce interconnectivity for participating organizations that have different computer and communication environments.

5 10. The processing engine of Claim 9, wherein the interface unit is an X.400 unit operable to communicate using an X.400 protocol.

10 11. The processing engine of Claim 10, wherein the plurality of communication units comprise a P1 unit and a P7 unit.

15 12. The processing engine of Claim 9, wherein the plurality of communication units includes a plurality of Internet mail units, and the processing engine further comprising a gateway coupled to the plurality of mail units and the engine, the gateway operable to interface between a communication protocol of the plurality of internet mail units and a communication protocol of the interface unit.

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 13. The processing engine of Claim 12, wherein the plurality of mail units comprise an SMTP unit, a MIME unit and a POP unit.

25 14. The processing engine of Claim 9, wherein the profiles of the originator organization and the recipient organization are accessible via an external user interface.

15. A method of operation for an electronic commerce distributed network, comprising:

forming a processing node having a first sub-node and a second sub-node in geographically remote locations,
5 the first and second sub-nodes connected to communicate information;

operating the first sub-node in an active state to communicate with other processing nodes and to process electronic commerce messages communicated with
10 originator/recipient organizations;

operating the second sub-node in a mirror state to mirror the first sub-node while the first sub-node is operated in the active state; and

switching the second sub-node, if the first sub-node
15 fails, to operate in an active state to communicate with other processing nodes and to process electronic commerce messages communicated with originator/recipient organizations;

such that operation of the electronic commerce
20 distributed network is maintained in the event the first sub-node experiences failure.

16. The method of Claim 15, wherein operating to process electronic commerce messages when in the active
25 state comprises:

receiving electronic commerce messages from originator organizations;

processing the electronic commerce messages to build outgoing electronic commerce messages; and

communicating the outgoing electronic commerce messages to recipient organizations.

17. The method of Claim 15, further comprising:

5 operating the first sub-node in a mirror state to mirror the second sub-node while the second sub-node is operated in the active state; and

10 switching the first sub-node, if the second sub-node fails, to operate in the active state to communicate with other processing nodes and to process electronic commerce messages communicated with originator/recipient organizations;

15 such that operation of the electronic commerce distributed network is maintained in the event either the first sub-node or the second sub-node experiences failure.

18. The method of Claim 17, wherein operating the first and second sub-nodes is accomplished using:

20 a processing engine;
 a regional server; and
 a regional mirror server;

 wherein the processing engine and the regional mirror server are operated when in the active state and
25 the regional mirror server is operated when in the mirror state.

19. The method of Claim 15, wherein operating to process electronic commerce messages comprising

processing electronic commerce messages for participating organizations within a regional area of each processing node.

- 5 20. The method of Claim 15, wherein the first sub-node and the second sub-node are in geographically locations comprising different cities.

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